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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,306	01/27/2006	David H. Tracy	B 545	1902
22840 7590 05/26/2010 GE HEALTHCARE BIO-SCIENCES CORP. PATENT DEPARTMENT 101 CARNEGIE CENTER PRINCETON, NJ 08540			EXAMINER SUAREZ, FELIX E	
			ART UNIT 2857	PAPER NUMBER
			NOTIFICATION DATE 05/26/2010	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

melissa.leck@ge.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/566,306	<b>Applicant(s)</b> TRACY, DAVID H.	
	<b>Examiner</b> FELIX E. SUAREZ	<b>Art Unit</b> 2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-33 and 42-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-33 is/are allowed.
- 6) ☒ Claim(s) 42-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>02/17/2010</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Allowable Subject Matter*

1. **Claims 1-33** are allowed.
2. The following is an examiner's statement of reasons for allowance:

**Claims 1-32**, are allowable because the closest prior art, Kochergin et al. [U.S. Patent No. 6,549,687] (hereafter Kochergin) and Thornton [U.S. Patent No. 7,283,242], either singularly or in combination, fail to anticipate or render obvious method for quantization of surface-binding optical resonance profiles comprising, in combination, the steps of:

determining at least one resonance parameter by fitting at least one experimental result to the calibration profile, wherein the calibration scan is performed at a high scan point density compared to the scan point density of the experimental scan; in combination with all other limitations in the claim(s) as claimed and defined by applicant.

**Claim 33** is allowable because the closest prior art, Kochergin and Thornton, either singularly or in combination, fail to anticipate or render obvious method for quantization of surface-binding optical resonance profiles comprising, in combination, the steps of:

determining a resonance shift of at least one experimental result relative to at least one calibration profile, wherein the calibration scan is performed at a high scan point density compared to the scan point density of the experimental

scan; in combination with all other limitations in the claim(s) as claimed and defined by applicant.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in–

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

3. Claims 42-44 and 46, are rejected under 35 U.S.C. 102(e) as being unpatentable over Kochergin et al. (U.S. Patent No. 6,549,687).

With respect to claim 42, Kochergin teaches a method for qualifying a surface Plasmon resonance chip comprising, in combination, the steps of:

obtaining a golden calibration profile for the type of chip to be qualified (see col. 10 line 64 to col. 11 line 2, control block 49 responds to the electrical detection signal from the photo-detector 48 in the example embodiment by calibrating a variable voltage or other tuning signal for the tunable Vertical Cavity, Surface Emitting Laser VCSEL; and see col. 5, lines 9-35, an illustrative example of a characteristic absorber/reflector material is a semiconductor);

obtaining at least one calibration result from a calibration scan of at least one Region of Interest of a chip to be tested (see col. 9, lines 27-31; FIG. 4 exemplary transmission optical power profile of a sensor employing Surface Plasmon Resonance SPR);

comparing said at least one calibration result to said golden calibration profile to obtain at least one comparison result (see col. 16, lines 21-25, the valley in the curve, caused by a surface Plasmon, is shifted in wavelength); and

determining whether said chip is suitable for use by applying selection criteria to said at least one comparison result (see col. 7, lines 1-16, wavelength at minimum, maximum or slope; and see col. 16, lines 36-38, lasers and/or optical spectrometers will provide at least an order of magnitude increase in the system resolution through computational and statistical means).

With respect to claim 43, Kochergin in combination with Eda teaches all the features of the claimed invention; and Kochergin further teaches including the step of displaying chip qualification results to the user (see col. 13, lines 53-59, signal waveforms illustrated in FIGS. 3A-3J).

With respect to claim 44, Kochergin in combination with Eda teaches all the features of the claimed invention; and Kochergin further teaches that, the step of determining whether the chip is suitable includes the step of incrementing a "bad ROI" count (see col. 11, lines 13-22, the Fabry-Perot cavity region that

contains the active material, alternately, as a reflective or partially reflective single layer, such as aluminum).

With respect to claim 46, Kochergin in combination with Eda teaches all the features of the claimed invention; and Kochergin further teaches that, the step of comparing the calibration includes the step of initializing a fit module with a chip qualification parameter set (see col. 3 line 56 to col. 4 line 4, the angle of minimum reflective intensity is the resonance angle).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kochergin et al. (U.S. Patent No. 6,549,687) in view of Thornton (U.S. Patent No. 7,283,242).

With respect to claim 45, Kochergin teaches all the features of the claimed invention, except that Kochergin does not teach,

the step of storing a "bad ROI" number for display.

But Thornton teaches in an optical spectroscopy apparatus that, once a

signal is digitized, it is processed within a digital signal processor (DPS) which performs the function of multi-tone phase sensitive detection for the several tones simultaneously present on the photo-detector sensor; Thornton also teaches that at the DPS, the amplitudes as well as phase differences of the multi-tone frequency signals are compared with known spectral data, stored in the memory (see Thornton; col. 22, lines 24-39).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kochergin to include a digital signal processor (DSP) as taught by Thornton, because the DSP of Thornton allows to compare data from the photo-detector with known spectral data, stored in the memory, as desired.

### ***Response to Arguments***

5. Applicant's arguments filed have been fully considered but they are not persuasive respect to claims 42-46. The Examiner has thoroughly reviewed applicant arguments, but believes the cited references to reasonably and properly meet the claimed limitations.

6. With respect to independent claim 42, applicant primary argument is that;

"With regard to claim 42, which is also rejected under 35 U.S.C. § 102(e) as being unpatentable over Kochergin et al., [U.S. Patent No. 6,549,687] (hereafter Kochergin) it is submitted that Kochergin does not in any way disclose registration of any calibration profiles relating to the SPR response and

specifically not any golden calibration profile for the type of chip to be qualified” (see Applicant’s REMARKS/ARGUMENTS, page 13 of 15, last paragraph).

The Examiner disagrees.

The phrase “golden calibration profile for the type of chip to be qualified”, is ambiguous and indefinite and may be rejected as non statutory, under 35 U.S.C. 112, second paragraph as indefinite.

The Examiner considers that the phrase “golden calibration profile for the type of chip to be qualified”, may be referred to a the chip made on base to the gold metal or the same phrase may be referred to a optimum reference, or may be referred to a quality reference as it is described by the applicant, but the quality described is not given with values limit references, or ranges, for a determined process.

The Examiner considers that a golden calibration profile with not particular definition is any reference profile.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

Art Unit: 2857

calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Conclusion***

***Prior Art***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Johnston et al. [U.S. Patent No. 6,825,922] describes a position sensitive detector.

Coates et al. [U.S. Patent No. 6,707,043] describes an on site analyzer.

Tracy et al. [U.S. Patent No. 6,029,115] describes an analyzer spectrometric data.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Felix Suarez, whose telephone number is (571) 272-2223. The examiner can normally be reached on weekdays from 8:30 a.m. to 5:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eliseo Ramos-Feliciano can be reached on (571) 272-7925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300 for regular communications and for After Final communications.

May 20, 2010

/Felix E Suarez/

Examiner, Art Unit 2857

/Hal D Wachsman/

Primary Examiner, Art Unit 2857